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Concluded

a magnetic layer formed on the substrate;  
the magnetic layer including a data region and a positioning region, the  
positioning region having management information for managing the data region and a servo  
pattern, the management information and the servo pattern being formed as magnetic marks,  
wherein the information is recorded onto the magnetic layer with the light and the external  
magnetic field and is reproduced from the magnetic layer by detecting a magnetic field  
generated from the magnetic layer.

REMARKS

Claims 1-20 are pending. By this Amendment, claim 1 is amended. No new matter is introduced by this Amendment.

The attached Appendix includes marked-up copies of each rewritten paragraph (37 C.F.R. §1.121(b)(1)(iii)) and claim (37 C.F.R. §1.121(c)(1)(ii)).

Reconsideration of the application in view of the foregoing Amendment and the following remarks is respectfully requested.

I. Formal Matter

The title of the invention has been amended to be more descriptive of the intended invention.

II. Claims 1-20 Define Patentable Subject Matter

A. The Office Action rejects claims 1-9 and 11-20 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 5,473,584 to Oshima. This rejection is respectfully traversed.

1. The Office Action asserts that Oshima discloses all the features of claims 1-9 and 11-20. However, it is respectfully submitted that Oshima does not disclose a magnetic layer including a data region and a positioning region, the positioning region having management information for managing the data region and a servo pattern, the management

information and the servo pattern being formed as magnetic marks, wherein the information is recorded onto the magnetic layer with a light and the external magnetic field and is reproduced from the magnetic layer by detecting a magnetic field generated from the magnetic layer, as recited in claim 1.

Oshima discloses a recording medium 2 having a magnetic recording layer 3 and an optical recording layer 4 in Fig. 1. During the magneto-optical recording, laser light is focused on a region of the optical recording layer 4 by an optical head 6 while applying a magnetic field to the region to record information on the optical recording layer 4. See col. 18, lines 15-24 and lines 54-66. During the magneto-optical reproduction, light is focused on the optical layer 4 by the optical head 6. See col. 18, lines 10-14, and col. 19, line 43-col. 20, line 7. Oshima discloses a magnetic recording mode of operation in which the magnetic recording layer 3 is vertically magnetized by a magnetic field while tracking with the optical head 6 which is mechanically coupled with the magnetic head 8. See col. 18, lines 25-27, col. 20, lines 31-58, and col. 21, line 55-col. 22, line 14. In Oshima, a magnetic layer onto which the information is recorded with light and an external magnetic field is independent from a magnetic layer from which the information is magnetically reproduced.

Thus, Oshima does not disclose a recording medium in which information is recorded onto the magnetic layer with light and an external magnetic field applied to a magnetic layer and is reproduced from the magnetic layer by detecting a magnetic field generated from said magnetic layer. In the preferred embodiments of the invention, information is recorded with light and an external magnetic field onto a single magnetic layer and the recorded information is magnetically reproduced from the single magnetic layer. ✓

Oshima's recording medium in the tenth embodiment has an embedded servo magnetic track on a surface thereof as shown in Fig. 83, which has been pointed out in the Office Action. However, Oshima does not disclose that information is recorded onto the

surface with light and an external magnetic field, as recited in claim 1. See col. 45, lines 17-66. ✓

Further, with respect to claim 5, which depends from claim 1, Oshima does not teach or suggest that the servo pattern includes a pattern for servo controlling a reproducing magnetic head, and the pattern is equal to in width or narrower in width than the reproducing magnetic head in a width wise direction of the tracks. ✓ *invent*

In view of the foregoing discussions, it is respectfully submitted that Oshima does not disclose the features of independent claim 1. Due to their dependency, upon claim 1, claims 2-5 are also not disclosed by Oshima.

2. Regarding independent claim 6, Oshima does not teach or suggest a first positioner for positioning the optical head and recording magnetic head at a target track of the information recording medium on the basis of magneto-optical signal from the magnetic marks from which magnetic leakage fields are detected by a reproducing magnetic head. *?* *isn't this std.* These features are clearly recited in claim 6.

That is, in the preferred embodiments of the invention, when information is recorded, an optical head and a recording magnetic head are used. During the recording, the first positioner positions the optical head and the record magnetic head at a target track of the medium on the basis of magneto-optical signals from the magnetic marks on the magnetic layer of the medium. When the information is reproduced, a reproducing magnetic head is used. During the reproduction, the reproducing magnetic head detects magnetic fields from the magnetic marks on the same magnetic layer.

By contrast, during the magneto optical recording in Oshima, the optical head is driven based on tracking information recorded on an optical recording layer 4. During the magneto-optical reproduction, information recorded on the optical recording layer 4 is

reproduced by detecting a reflection light from the optical recording layer rather than detecting magnetic fields from magnetic marks. See col. 18, line 15-col. 20, line 7.

In view of the foregoing discussions, it is respectfully submitted that Oshima does not teach the subject matter of independent claim 6. Accordingly, it is respectfully submitted that due to their dependency upon claim 6, claims 7-15 are not disclosed in Oshima.

3. Regarding independent claim 16, Oshima does not teach or suggest detecting, during information reproduction, magnetic leakage fields from the magnetic marks from which magnetic optical signals are detected with laser beam during information recording.

As mentioned above, in the preferred embodiments of the invention, the magnetic marks are recorded on a single magnetic layer from which information is recorded with light and a magnetic field and is reproduced by detecting leakage field from the marks.

Thus, it is respectfully submitted that due to the same reasons discussed above with respect to independent claim 6, independent claim 16 should also be considered allowable. Additionally, due to their dependency upon claim 16, claims 17-20 are also not disclosed in Oshima.

In view of the foregoing discussions, it is respectfully submitted that Oshima does not teach, suggest or disclose the subject matter of independent claims 1, 6 and 16. Accordingly, withdrawal of the rejection of claims 1-9 and 11-20 under 35 U.S.C. §102(b) as being anticipated by Oshima is respectfully requested.

B. The Office Action Rejects Claim 10 under 35 U.S.C. §103(a) as being Unpatentable over Oshima and Further in View of Japanese Patent JP 2000-182291 or Official Notice.

This rejection is respectfully traversed for the same reasons discussed above with respect to independent claim 6. Thus, it is submitted that the applied Japanese patent does not make up for the deficiencies discussed above with respect to independent claim 6.

Accordingly, withdrawal of the rejection of claim 10 under 35 U.S.C. §103(a) as being unpatentable over the combination of Oshima and JP 2000-182291 is respectfully requested.

III. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited. Should the Examiner believe that anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the Applicants' representative at the telephone number listed below.

Respectfully submitted,

  
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JAO:CCH/pmo

Attachment:

Appendix  
Petition for Extension of Time

Date: February 22, 2002

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<b>DEPOSIT ACCOUNT USE AUTHORIZATION</b> Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461
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## APPENDIX

## Changes to Title:

The following is a marked-up version of the amended title:

INFORMATION RECORDING MEDIUM, RECORDING AND REPRODUCING APPARATUS THEREFOR, AND HEAD POSITIONING METHOD USING A SERVO PATTERN BEING FORMED AS MAGNETIC MARKS

## Changes to Claims:

The following is a marked-up version of the amended claim 1:

1. (Amended) An information recording medium on which information is recorded with light and an external magnetic field applied to the recording medium, the information recording medium comprising:

    a substrate; and

    a magnetic layer formed on the substrate;

    the magnetic layer including a data region and a positioning region, the positioning region having management information for managing the data region and a servo pattern, the management information and the servo pattern being formed as magnetic marks, wherein the information is recorded onto the magnetic layer with the light and the external magnetic field and is reproduced from the magnetic layer by detecting a magnetic field generated from the magnetic layer.